BQAZ Statewide Intrastate Mobility Reconnaissance Study

DRAFT RECOMMENDATIONS

DIALOGUE ON IMPROVING SYSTEM MANAGEMENT AND OPERATIONS

Background

Members of the Arizona COG/MPO Directors Association have been meeting over the last two years to discuss the impacts of growth on the state's transportation system and the need for a better understanding about infrastructure and funding needs. This discussion led to the scoping and initiation of the Building a Quality Arizona (BQAZ) - Statewide Intrastate Mobility Reconnaissance Study. A nine-month study was launched, in March 2007, by MAG on behalf of the Arizona COG/MPO Directors Association and the Arizona DOT. It is being conducted by DMJM Harris.

The goals of the study are to: (1) determine the need for framework studies across Arizona; (2) to provide a review of the near-term needs in transportation infrastructure; and (3) to develop a statewide sketch planning tool for estimating travel demand between the state's activity centers and to/from external sources

The Reconnaissance Study includes a task (Task 5) that would identify short-term transportation solutions. These solutions have been described, in the study scope of work, as a list of transportation projects for the short-term, twenty-year horizon throughout the state. Upon completion, the study findings will be provided to the Legislature and the Governor.

Recent studies on transportation congestion all point to the urgent need to better manage the available capacity in the road system. It has been estimated that nearly 55 percent of all congestion is the result of random events that cause traffic flow restrictions and hence delays. While the overall BQAZ study focused on identifying the needs for expanding the capacity of existing roads, and establishing new network connectivity through new roads, a new discussion was needed to focus on how to get the maximum use out of the existing and planned capacity of the road system.

The statewide discussion on System Management and Operations (SM&O) was initiated by MAG in connection with the BQAZ Reconnaissance Study. This discussion sought to engage the COGs/MPOs, Arizona DOT and other key stakeholder agencies to identify potential initiatives for inclusion in the final BQAZ study report as a separate chapter on Transportation System Enhancement through System Management and Operations. This discussion was facilitated in its entirety by MAG staff working on Intelligent Transportation Systems and Transportation Safety. The resulting recommendations have been reviewed and approved by the stakeholder group that participated in the discussion.

Goal

The goal of this statewide dialogue was to recommend a suite of potential strategies and relevant technologies, that could be implemented in the short-term, to improve statewide transportation management and operations. It is expected that these recommendations will be included in the final report of the ongoing Statewide Instrastate Mobility Reconnaissance Study.

Role of Systems Management and Operations, and Technology Applications

The increasingly important role played by system management and operations strategies (including relevant Intelligent Transportation Systems technology applications) in the more urbanized areas of the state have clearly pointed to the need to include these among potential short-term solutions. The Phoenix and Tucson metropolitan regions are making significant progress in preparing each region for future operations and management through strategic application of Intelligent Transportation Systems technology and building the required communications infrastructure at the local level. Significant improvements are also being made to the coordination among and between state and local agencies in these regions. Led by the Arizona DOT, similar efforts and technology applications are underway across the state, but at a lower scale due to the large coverage required.

The operational improvements anticipated would include topic areas such as: quick clearance of bottlenecks due to crashes/incidents/debris and stalled vehicles; accurate and timely information to travelers about road conditions ahead; improved coordination among key agencies; and better dissemination of traffic information through local media during major events.

The resulting benefits would include overall road safety improvements, improved system efficiency, lower user cost, and less inconvenience to the traveling public.

What is System Management and Operations?

The following statement is a good definition for what is meant by System Management and Operations:

"An integrated program designed to make the best use of existing highway infrastructure through provision of systems and services that preserve and improve performance."
– *AASHTO Operations and Management Strategic Plan*, 2005.

Figure 1 below shows the major causes of the traffic congestion. Except for congestion caused by "Bottlenecks" which is primarily due to lack of capacity, all other causes can be addressed through strategies that involve System Management and Operations. This implies that 60 percent of congestion might be addressable through better SM&O.

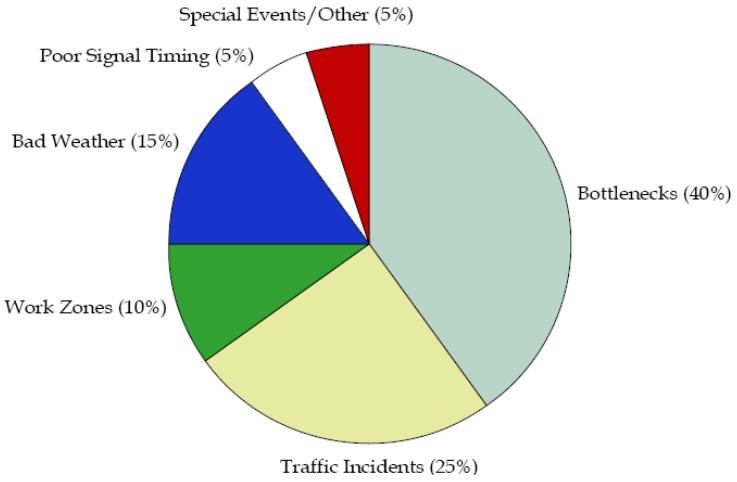

Figure 1. Sources of Traffic Congestion

Source: Traffic Congestion and Reliability: Linking Solutions to Problems, Federal Highway Administration, July 19, 2004

The Process Used for Generating SM&O Recommendations

Two stakeholder meetings were held to discuss the subject and generate ideas. The meetings were coordinated by MAG and were held at the MAG office, with some participation from stakeholders at locations statewide. All of the COGs/MPOs staff, key ADOT staff and staff from federal agencies were invited to participate. The list of participants provided at the back of this document lists all the agencies and individuals sought for their input to this process. Email communication was heavily relied upon to reach out to the statewide agencies.

The first meeting was held on July 12th, 2007. The group was briefed on the intent of the discussion and its relevance to the BQAZ study. Presentation were made by all the key agencies on their current roles in SM&O. MAG shared a presentation on traffic delay caused by crashes on the I-17 corridor during 2005. A brainstorming session that followed identified a list of needs or actions/strategies for improving SM&O across the state. Meeting notes were distributed to the entire stakeholder list and a few comments were received via email.

A second meeting was held on September 25th as a web-seminar facilitated by MAG. There was limited participation at this meeting. A sort list of strategies were reviewed at this meeting and further input was sought from participating stakeholders. Stakeholders were informed that a draft document on recommendations based on this dialogue would be produced and distributed by MAG by the end of November, which is a reference to this draft document.

List of Strategies Identified

A complete listing of relevant SM&O or related strategies identified through this statewide dialogue is provided below. They have been broadly categorized into three groups as shown below. The order in which they are listed does not imply any ranking. Strategies that seemed to receive a higher level of support/need have been shown in bold.

A) <u>Improvements OR New Strategies in System Management & Operations</u>

1. **Introduce Freeway Service Patrols in the Tucson region and also a similar service statewide**

2. **Better statewide communications interoperability between DPS and ADOT**
    a. **some rural ADOT districts have exchanged ADOT and DPS radios as an interim measure**
    b. **DPS and City of Phoenix have developed a method to patch DPS through Phoenix police dispatch to any of 35 local agencies for better coordination, ADOT needs to be added to this list of 35 agencies**

3. **Introduce Freeway and Arterial Rapid Reponse Teams for Tucson, Flagstaff and other ADOT districts for quick clearance of traffic incidents – like the ADOT ALERT and the MCDOT's REACT in the Phoenix metropolitan region**

4. **Post travel times on Dynamic Message Signs – urban regions (Expected in the Phoenix region by the end of January, 2008)**

5. Post travel times on Dynamic Message Signs in rural corridors -- needs further research work by ADOT

6. Utilize Federal Motor Carrier Safety Administration's PRISM Program to enhance safety performance of large trucks

7. Increase HOV enforcement

8. **Develop Integrated Corridor Management Systems**
    a. **For better coordination between freeway and arterial traffic management**

9. Use Highway Advisory Radios to better inform motorists

10. **Restrict trucks to the rightmost lanes – studies have indicated that such restrictions could improve overall safety**

11. Expand the coverage of ADOT's 511 traveler information system
    a. Add information on major incidents on the arterial system

B) <u>Improvements OR New Strategies in Road Safety</u>

1. **Introduce a Primary Seat Belt Law in Arizona – this would lead to reductions in overall crash severity with lesser delays due to the minor crashes**
    a. **Already adopted by PAG in their 2008 Legislative Policy Positions**
    b. **Statewide support could lead to passage of this key safety legislation**

2. Expand automated enforcement for reducing excessive and unsafe speeding – underway by mobile DPS photoradar vans

C) <u>Additional Resources for Current Operations</u>

1. **Increase DPS FTEs to match DPS Resource Allocation Model recommendations**
    a. **Additional staff have been included in the 2009 DPS budget**
    b. **148 vacancies**

2. **A statewide program/resources to improve local street traffic signal timing on a regular basis**
    a. **Need programs/resources at MPOs and COGs for optimizing local traffic signals on a regular basis**

3. **Increase ADOT FTEs for effective winter maintenance and freeway ITS/electronic equipment maintenance**

BQAZ Operations & Management Discussion
List of Stakeholders/Participants

FEDERAL

Federal Highway Administration - FHWA
Division Administrator - Robert Hollis
Transportation Engineer - Alan Hansen
Eng Development Coordinator - Ed Stillings

Federal Motor Carrier Safety Administration - FMCSA
Division Administrator - Eric Ice

STATE

Governor's Office of Highway Safety - GOHS
Director - Richard Fimbres
Deputy Director - Mike Hegarty
La Retta Lehan – Program Manager

Arizona Department of Transportation - ADOT
Director - Victor Mendez
State Engineer – Sam Elters
Dy State Engineer – Floyd Roehrich
Dy State Engineer – Doug Forstie
Tr Planning Director – Dale Buskirk
State Traffic Engineer - Mike Manthey
State Maintenance Engineer - Lonnie Hendrix
Asst State Engineer, Phoenix Maintenance – Tim Wolfe
Asst State Engineer, Transportation Technology Group – Scott Nodes
Community Relations – Matt Burdick & Diane D'Angelo
Bill Hayden – Special Assistant, Life Cycle Program
Arnold Burnham – Transportation Planning Division
Doug Firnelza
John McGee - FMS
John Fink, - FMS
Maysa Hanna – ITD Phoenix Maintenance

Arizona Department of Public Safety - DPS
Director – Roger Vanderpool
Lt Mike Lockhart
Cdr Dennis Young

REGIONAL - COGs & MPOs

WACOG - Brian Babairs
PAG - Gary Hayes
NACOG – Kenneth Sweet

CAAG – Maxine Leather, Jack Tomasik, Bill Leister
SEAGO – Rich Gaar
FMPO - David Wessel
CYMPO - Jodi Rooney
YMPO - Mack Luckie, Paul Melcher
MAG – Dennis Smith, Eric Anderson, Matt Clark, Bob Hazlet, Sarath Joshua